

Application No. 10/817,135
Amendment dated June 28, 2007
Reply to Office Action of April 6, 2007

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REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Office Action mailed on April 6, 2007, and the references cited therewith.

Claims 1 and 23 are amended, claim 6 was previously canceled, and no claims are added; as a result, claims 1-5, and 7-54 are pending in this application.

Applicant respectfully submits that the amendments to claims 1 and 23 do not introduce any new subject matter and support for the amendments can be found in Applicant's Specification at page 8, line 33 thru page 11, line 16, among other places.

§ 102 Rejection of the Claims

Claims 1, 3-5, 8-10, 12-14, 16 and 23-28 were rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,180,239 to Whitesides et al. (hereinafter "Whitesides"). Applicant respectfully traverses and addresses the rejection as follows.

Applicant respectfully submits that Whitesides does not describe all the elements recited in claim 1 and claim 23 as amended. For example, Whitesides does not appear to describe applying the organic molecules to an aligning surface, allowing the organic molecules to form an ordered pattern on the aligning surface, contacting the aligning surface having the ordered pattern of organic molecules with the substrate, and separating the aligning surface from the substrate, leaving the ordered pattern of the organic molecules from the aligning surface on the substrate, as provided in claims 1 and 23, as amended.

In the Office Action, it was asserted that,

Whitesides et al. teach a method creating a patterned feature on a substrate comprising: preparing a solution of organic molecules having self-assembling properties (27), applying the solution to an aligning surface (20), contacting the aligning surface with the substrate (30), and separating the aligning surface from the substrate, (Figure 1d) leaving patterns of the organic molecules on the substrate.

(Office Action, page 3).

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However, Whitesides appears to describe applying a self-assembling species 27 to a stamp surface 26, and contacting the stamp surface 26 to a surface 28 of an article 30. (See Figure 1a-1b). In addition, Whitesides appears to describe allowing the stamping surface 26 to remain in contact with surface 28 for a period of time sufficient to allow molecular species 27 to spread from portion 34 of surface 28 onto portion 36 of the surface 28. (See Figure 1c). Species 27 is thus allowed to spread across surface 28 to form an increasingly narrow gap 38 (Figure 1d) on surface 28. The result of the method taught in Whitesides is shown in Figures 1d and 1e. As can be seen, it appears that species 27 is coated onto portions of the surface 28, and the gap 38 is defined by adjacent regions of self-assembled monolayer 27 formed by contacting the stamp surface 26 to the surface 28. From this, it seems possible that if the stamping surface 26 were in contact with the surface 28 for a sufficient amount of time the gap would not be formed at all.

Whitesides does not appear to describe the self-assembling species forming the pattern in and of itself without the stamping surface 26. Rather, the species 27 appears to be coated onto the stamping surface 26 and when contacted with surface 28, the species 27 appears to spread out uniformly, where the gap is formed by adjacent regions of the monolayer 27. In addition, as mentioned above, it appears that if the stamping surface 26 was left in contact with surface 28 for a longer time period, the gap would not be formed, rather, the species 27 would spread out to cover the entire surface 28. In other words, Whitesides appears to describe the ordered pattern on the substrate is formed only after the stamping surface 26 is contacted with the surface 28 and the species 27 migrates for a specified amount of time.

In the present disclosure, however, Applicant provides in independent claims 1 and 23 allowing the organic materials to form an ordered pattern on the aligning surface, contacting the aligning surface having the ordered pattern of organic molecules with the substrate, and separating the aligning surface from the substrate, leaving the ordered pattern of the organic molecules from the aligning surface on the substrate.

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Therefore, Whitesides does not appear to describe applying organic molecules to an aligning surface, allowing the organic molecules to form an ordered pattern on the aligning surface, contacting the aligning surface having the ordered pattern of organic molecules with the substrate, and separating the aligning surface from the substrate, leaving the ordered pattern of the organic molecules on the substrate, as provided in claims 1 and 23, as amended.

Based on the forgoing, Applicant respectfully submits that Whitesides does contain each and every element and limitation of independent claims 1 and 23, as amended. As such, Applicant respectfully submits that Whitesides does not support a 102(b) rejection of claims 1 and 23. Applicant respectfully requests reconsideration and withdrawal of the 102(b) rejection for independent claims 1 and 23, as well as those claims which depend therefrom.

§103 Rejection of the Claims

Claims 11, 15 and 22 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides in view of U.S. Patent No. 6,562,398 to Braach-Maksvytis, et al. (hereinafter "Braach-Maksvytis").

Claims 17-19 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides in view of U.S. Patent No. 5,578,351 to Shashidhar et al. (hereinafter "Shashidhar").

Claims 21 and 29 were rejected under 35 USC § 103(a) as being unpatentable over Whitesides, in view of U.S. Patent No. 6,465,054 to Effenberger (hereinafter "Effenberger").

Applicant respectfully traverses the rejection as follows.

Claims 11, 15, and 22 depend from independent claim 1, claims 17-19 depend from independent claim 1, claim 21 depends from independent claim 1, and claim 29 depends from independent claim 23, which are in condition for allowance for at least the reasons stated above. That is, Whitesides does not describe, teach, or suggest each and every element contained in Applicant's independent claims 1 and 23. Braach-Maksvytis, Shashidhar, and Effenberger do not cure the deficiencies of

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Whitesides. For example, Braach-Maksvytis, Shashidhar, and Effenberger do not describe, teach, or suggest, independently or in combination with Whitesides, preparing organic molecules having self-assembling properties, applying the organic molecules to an aligning surface, allowing the organic molecules to form an ordered pattern on the aligning surface, contacting the aligning surface having the ordered pattern of organic molecules with the substrate, and separating the aligning surface from the substrate, leaving the ordered pattern of the organic molecules from the aligning surface on the substrate, as provided in independent claims 1 and 23 as amended.

As such, Applicant respectfully submits that each and every element and limitation of independent claims 1 and 23 as amended are not taught or suggested by Braach-Maksvytis and Whitesides, Shashidhar and Whitesides, and Effenberger and Whitesides, either individually or in combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 103(a) rejection of dependent claims 11, 15, 22, 17-19, 21, and 29.

Allowable Subject Matter

Applicant thanks the Examiner for identifying that claims 2 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.